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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/615,168	07/13/2000	Donald R. White	5869-2	4923

7590 05/21/2003

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EXAMINER

TRAN, CON P

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 05/21/2003

15

Please find below and/or attached an Office communication concerning this application or proceeding.

Handwritten mark

Office Action Summary	Application No.	Applicant(s)	
	09/615,168	WHITE, DONALD R.	
	Examiner	Art Unit	
	Con P. Tran	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>10,13,14</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1-5, 7, 13-14, 16-17, and 21** are rejected under 35 U.S.C. 102(b) as being anticipated by Wilcox Jr. (U.S. 4,972,491).

Regarding **claims 1, 4, 13, and 21**, Wilcox Jr. teaches (see Fig. 1, 2, 3 and respective portions of the specification) a full duplex audio headset (102; two-way communication, col. 3, lines 55-58) comprising:

shell member 104 which is disposed surrounding the right outer ear of the user subject 100; headband member 106 (col. 5, lines 6-11); earplug-type transducers 341 and 342 which are both capable of converting an audio signal from the user subject's ear canal 110 into an electrical signal or converting an electrical signal into an audio signal into the user's ear canal 110 (col. 6, lines 23-30); connections between tether cord 314 and electrical connector member 316 can be made so that the earplug transducers transmit or received, in stereo or monaural and further, one of the earplug

transducers acts only as a microphone while the other acts only as a speaker (col. 6, lines 55-68).

Regarding **claims 2, 3, 5, 7, 14, and 16-17**, Wilcox Jr. also teaches (see Fig. 1, 2, 3 and respective portions of the specification): an acoustic energy shielding foam 330 located within the cavity 328, spring 345 is corkscrewed along with its transducer 341 or 342, into the acoustic energy shielding foam 330, a center portion holding the microphone away from the inside walls of the housing (col. 7, lines 25-30); connector 202 pin numbers 1 and 3 are connected via wires 317 to earplug transducer 341 and connector 202 pin numbers 2 and 4 are connected via 204B, 204 and 204A to earplug transducer 342, inherently comprises a grounding wire at multiple circuit plug 326 (col. 6, lines 50-68); this type of transducer detects speech via the user's eustachian tube via ear canal via single flange plug acoustic duct; single flange earplugs 343 have a nipple, a cone-shaped stalk portion and an umbrella-shaped shroud (see Fig. 3) flexibly seals ear canal 110 (col. 7, lines 15-35).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilcox Jr. (U.S. 4,972,491) in view of Yoshimi (U.S. 4,403,120).

Regarding to **claim 6**, Wilcox Jr. teaches an audio headset according to claim 1. However, Wilcox Jr. does not explicitly show wherein the first and second ear piece each comprise circular disc portions with flat faces that rest inside the ear canals, neck portions that connect the disc portions to headset frames, and a headband that connect to the headset frames, the microphone and ear phone located in the circular disc portions. Thus one of ordinary skill would have been motivated to seek an embodiment in order to modify an actual working arrangement taught by Wilcox Jr. Such embodiments would have been any known earphone such as one of Yoshimi in the same field of endeavor.

Yoshimi teaches an earphone 150 comprises circular disc portions 121 with flat faces 123 that rest inside the ear canals, neck portions 111b that connect the disc portions 121 to headset frames 140, and a headband 150 that connect to the headset frames, the microphone and ear phone 120 located in the circular disc portions (Fig. 15-18; col. 7, lines 19-55) order to provide an earphone with compactness and high performance (column 2, lines 24-25).

Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have modified Wilcox Jr. with a particular headset as taught by Yoshimi since such modification would have provided an earphone with compactness and high performance as suggested by Yoshimi in column 2, lines 24-25.

5. **Claims 8-11, 15, and 18-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilcox Jr. (U.S. 4,972,491) in view of Lazarus et al. (Lazarus; U.S. 4,280,018).

Regarding to **claim 8**, Wilcox Jr. teaches an audio headset according to claim 1. However, Wilcox Jr. does not explicitly suggest the microphone includes a piezoelectric transducer. Thus one of ordinary skill would have been motivated to seek a microphone embodiment in order to modify an actual working arrangement taught by Wilcox Jr. Such embodiments would have been any known microphone such as one of Lazarus et al. in another analogous art.

Lazarus et al. teaches (see Fig. 1 and respective portions of the specification) the piezoelectric transducers (10) have been used to produce electrical transmit signals (see col.1, lines 5-15) from the audio input signals (see line 1, Abstract) because it is small and light (see col. 1, lines 50-52).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to have included within the Wilcox Jr. a microphone that includes a piezoelectric transducer as taught by Lazarus in order to generate the electrical transmit signals from the audio input signals because the piezoelectric transducer is small and light as suggested by Lazarus in column 1, lines 50-52.

Regarding to **claim 9**, Lazarus et al. further teaches (see Fig. 1 and respective portions of the specification) the transducer (10) including a FET transistor (Q1) in order to provide impedance matching. The transistor (Q1) having a first gating terminal coupled to a first terminal (18) of the transducer (12), a second output terminal (D) for outputting the transmitted signal, and a third terminal (S) for coupling to a ground connection.

Regarding to **claim 10**, Wilcox Jr. in view of Lazarus teach an audio headset in according to claim 9. Lazarus further teaches (see Fig. 1 and respective portions of the specification) a load resistor 20 and capacitor 22 connected to the source of the transistor (Q1) and an RC filter consisting of a resistor 24 and capacitor 26, are connected to the drain of the transistor. It would have been obvious to replace the RC filter circuit and capacitor 22 by a LC circuit for the purpose of filtering out low audio frequencies from the transmit signals.

Regarding **claims 11 and 15**, Wilcox Jr. teaches an audio headset according to claim 1 and 14 respectively. However, Wilcox Jr. does not explicitly show the audio headset includes a filter circuit that filters out low frequencies associated with bone conduction from the electrical transmit signals. Lazarus further teaches (see Fig. 1 and respective portions of the specification) a load resistor 20 and capacitor 22 connected to the source of the transistor (Q1) and an RC filter consisting of a resistor 24 and capacitor 26, are connected to the drain of the transistor (see col. 2 lines 41-49).

Regarding **claim 18**, Wilcox Jr. teaches a method according to claim 13. However, Wilcox Jr. does not explicitly suggest using an output of a piezoelectric transducer in the first earpiece for generating the transmit signals.

Thus one of ordinary skill would have been motivated to seek an embodiment in order to modify an actual working arrangement taught by Wilcox Jr. Such embodiments would have been any known piezoelectric transducer such as one of Lazarus et al. in another analogous art.

Lazarus et al. teaches (see Fig. 1 and respective portions of the specification) the piezoelectric transducers (10) have been used to produce electrical transmit signals (see col.1, lines 5-15) from the audio input signals (see line 1, Abstract) because it is small and light (see col. 1, lines 50-52).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to have included within the Wilcox Jr. a piezoelectric transducers in the first ear piece for generating the transmit signals, as taught by Lazarus, because the piezoelectric transducer is small and light, as suggested by Lazarus in column 1, lines 50-52.

Regarding **claim 19**, Wilcox Jr. in view Lazarus et al. teaches a method according to claim 18, Lazarus et al. further teaches a method of using the transmit signal output from the piezoelectric transducer for controlling a field-effect-transistor

(FET) (see col. 1, lines 60-61) output (see col.2, lines 59-61) and using the transistor output as the transmit signals (col.2, lines 61-63).

Regarding **claim 20**, Lazarus et al. further teaches method including electrically filtering out low audio frequencies from the transmit signals (see col. 2 lines 45-48).

Response to Arguments

6. Applicant's arguments with respect to claims 1-11, and 13-21 have been considered but are moot in view of the new grounds of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of


the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Con P. Tran whose telephone number is 703-305-2341. The examiner can normally be reached on M-F (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Customer Service Office at telephone number 703-306-0377.

cpt CPJ
May 19, 2003


FORESTER W. ISEN
SUPERVISORY PATENT EXAMINER
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